

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.a: Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

Indicator 14.a.1: Proportion of total research budget allocated to research in the field of marine technology.

Institutional information

Organization(s):

Intergovernmental Oceanographic Commission of UNESCO

Concepts and definitions

Definition:

Definitions and mechanisms used in the development of the SDG indicator 14.a.1 are based on the IOC Criteria and Guidelines on Transfer of Marine Technology- IOCCGTMT (originally published and endorsed by IOC Member States in 2005, these guidelines provide an internationally agreed definition of what is understood by the term marine technology. These Guidelines have been referenced in various UN General Assembly Resolutions and specifically in the formulation of SDG target 14.a). These are further explained in the Global Ocean Science Report (GOSR) referenced below.

Marine technology as defined in the IOCCGTMT refers to instruments, equipment, vessels, processes and methodologies required to produce and use knowledge to improve the study and understanding of the nature and resources of the ocean and coastal areas. Toward this end, marine technology may include any of the following components:

- a) Information and data, in a user-friendly format, on marine sciences and related marine operations and services;
- b) Manuals, guidelines, criteria, standards, reference materials;
- c) Sampling and methodology equipment (e.g., for water, geological, biological, chemical samples);
- d) Observation facilities and equipment (e.g. remote sensing equipment, buoys, tide gauges, shipboard and other means of ocean observation);
- e) Equipment for in situ and laboratory observations, analysis and experimentation;
- f) Computer and computer software, including models and modelling techniques;
- g) Expertise, knowledge, skills, technical/scientific/legal know-how and analytical methods related to marine scientific research and observation.

Indicator 14.a.1 shows the annual national research budget allocated by governments in the field of marine technology, relative to the overall national governmental research and development budget in general.

Unit: percentage; raw data in national currency. The proportion can be calculated, and if needed, data can be converted by the international agency into USD.

Rationale:

Sustained investment in research and development (R&D), including ocean research, remains essential to advance knowledge and to develop new technology needed to support modern economies. The ocean economy yields various benefits in terms of employment, revenues and innovation in many domains. Its current developments are largely based on decades of science and R&D investments by governments around the world. Baseline information on ocean science funding, as delivered by the indicator 14.a.1 can be used as a starting point for more directed, tailored investment and new capacity development strategies, and to support the case for ensuring maximum impact of ocean research, for example through marine technology and knowledge transfer from government-funded marine and maritime R&D projects. Annual (2009-2013) baseline information for 24 countries is presented in the GOSR (Isensee, K., Horn, L. and Schaaper, M. 2017. The funding for ocean science. In: In: IOC UNESCO, Global Ocean Science Report—The current status of ocean science around the world. L. Valdés et al. (eds). Paris, UNESCO, pp. 80–97).

Concepts:

The concepts used for the definition and calculation of the indicator 14.a.1 are based on similar concepts used in the UNESCO Science Report (2010, 2015). These reports present GERD data (gross domestic expenditure on research and experimental development) as a share of GDP (gross domestic product) and further provide the R&D (research and development) expenditure by sector of performance in % (Table S2 in the 2015 report). In addition UIS publishes science field specific R&D, e.g. natural science (<http://data.uis.unesco.org/>).

The definitions and classifications used to collect R&D data are based on the ‘Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development’ (OECD).

Comments and limitations:

Due to the fact that no agreed mechanism to assess ocean science capacity existed until the first edition of the Global Ocean Science Report, national reporting mechanisms are scarce and/or are not harmonised. However, with the framework of 14.a and the new reporting mechanism in place, global and regional technology and knowledge transfer can be conducted in a resource- and need-adapted manner based on global inventories and comparisons.

Methodology

Computation Method:

Indicator 14.a.1 = National governmental research expenditure in marine technology / National governmental R&D expenditure

National governmental R&D expenditure data are assessed annually by the UNESCO Institute for Statistics (UIS).

National governmental ocean science expenditures are envisaged to be assessed biannually via the GOSR data portal (IOC-XXIX/2 Annex 10).

The development of the GOSR data repository/data portal will take place in close collaboration with UIS and IOC (at Headquarters and at the IOC Project Office for IODE, Oostende, Belgium).

Disaggregation:

National data set with updated every two years, possibility for regional and global aggregation

Treatment of missing values:

- [At country level](#)

In case countries do not provide data, no estimate will be calculated.

- [At regional and global levels](#)

For regional and global estimates/averages, only data received from Member States will be taken into account, missing values are not imputed or otherwise estimated.

Regional aggregates:

Each national contribution is weighted equally to calculate average values for the regional and global estimates.

Sources of discrepancies:

As this indicator only takes into account data submitted by Member States, there are no discrepancies between estimates and submitted data sets.

Methods and guidance available to countries for the compilation of the data at the national level:

- No particular guidance for the national data compilation exists as the organization of ocean science differs among Member States. Ways introduced to obtain relevant data are through IOC national focal points (IOC official national designated Coordinating Bodies for Liaison with the IOC) consult the respective ministry responsible for ocean science to obtain the data; IOC focal points contact universities and institutions individually.
- 1. IOC is an intergovernmental body of 148 Member States, the IOC national focal points may act as national coordinating bodies for relevant government departments, universities and research institutions actively involved in marine science and technology and other related aspects of ocean affairs.
- The novelty of the GOSR and therefore also the data it contains required the IOC secretariat to collect the data via IOC national focal point until now. Future data collections are expected to be a mixture of direct requests to NSOs, as new national reporting mechanisms are now installed allowing them to provide the required information (e.g. Colombia, Canada, Italy; document IOC-XXIX/2 Annex 14), questionnaires to the IOC national focal points and collaboration with National Oceanographic Data Centres. The GERD (gross domestic expenditure on research and development) data are obtained from the UNESCO Institute for Statistics, based on information directly provided from NSOs.

Quality assurance

- IOC national focal points and experts from UIS assist in the data quality assessment, comparing indicator values with the national expenditure for Natural Sciences (UIS), this allows the identification of discrepancies. In the future new values will be compared to previously obtained information. In case of discrepancies, the IOC secretariat will consult the data providers individually.
- Combination of: Automated quality control by data portal; National quality control; IOC.

Data Sources

Description:

Data sources: biannual direct submission to the GOSR data portal (currently in development) and the GOSR questionnaire biannual.

The questionnaire used for the first edition of the GOSR will be reviewed by the Editorial Board of the GOSR as well as by UIS in 2017/2018 prior to the next data collection exercise. Assessment from 2018 on will be conducted with an improved questionnaire.

As mentioned previously the novelty of the GOSR and required the IOC secretariat to collect the data via its national focal point until now. Future data collections are expected to be a mixture of direct requests to NSOs, as new national reporting mechanisms are now installed allowing them to provide the required information (e.g. Colombia, Canada, Italy; (document IOC-XXIX/2 Annex 14), questionnaires to the IOC national focal points and collaboration with National Oceanographic Data Centres. The GERD (gross domestic expenditure on research and development) data were obtained from the UNESCO Institute for Statistics, based on information directly provided from NSOs.

Collection process:

- (I) National Counterparts:
As mentioned in the previous paragraph the official counterparts are the IOC focal points and well as National Oceanographic and Statistical Data Centres.
- (II) Validation and consultation process by IOC Secretariat.
These counterparts are invited to provide metadata information for the data provided.

Data Availability

Description:

The table below shows the result of research budget allocated to research in the field of marine technology. The first assessments include information for 25 countries for the time period from 2009-2013 (or for a sub-set of these years). These data were published in the Global Ocean Science Report (2017).

Table 1. Percentage national governmental research expenditure in marine technology of GERD for countries which provided information regarding ocean science expenditure via the GOSR questionnaire (sources GERD,: UIS, 2015; ocean science expenditure: GOSR questionnaire, 2015; average non-weighted). Note: green fields indicate a percentage higher than 1.5 and yellow fields indicate percentages higher than 0.5.

Country	Percentage (%) governmental research expenditure in marine technology of GERD					
	Average 2009-2013	2009	2010	2011	2012	2013
Argentina	0.16	0.11	0.14	0.15	0.23	
Australia	0.74		0.72	0.76		
Belgium	0.07	0.10	0.07	0.05	0.05	
Canada (DFO)	0.54	0.51	0.54	0.60	0.54	0.53
Chile	0.20	0.36	0.11	0.15	0.20	
Colombia	0.39	0.40	0.39	0.43	0.36	0.35
Croatia						4.73
Ecuador	0.03	0.02	0.03	0.05		

Finland	0.14	0.14	0.16	0.00	0.20	0.20
France						0.79
Germany						0.40
India	0.77	0.61	0.77	0.92		
Italy	0.88	0.69	0.75	0.87	1.04	1.04
Japan	0.09	0.11	0.07	0.08	0.08	0.11
Kuwait	0.16	0.16	0.18	0.19	0.19	0.06
Morocco			0.37			
Norway	3.18	2.69		3.28		3.58
Republic of						
Korea	0.44	0.62	0.40	0.41	0.44	0.32
Romania	0.50	0.47	0.35	0.51	0.54	0.65
Russian						
Federation	0.04	0.03	0.04	0.04	0.03	0.04
Spain (IEO)	0.28		0.37	0.37	0.36	0.28
Thailand				2.02		
Trinidad &						
Tobago	1.81	1.03	1.63	2.36	2.20	
Turkey	0.07		0.06	0.04	0.07	0.09
USA					2.55	

Time series:

To date data are available for the years 2009-2013.

Calendar

Data collection:

The next data collection is planned in 2018 for the years 2014-2016.

Data release:

Expected dates of release of new data: End of 2018 for the years 2014-2016.

Data providers

IOC focal points

NSOs

UIS

Data compilers

Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO)

UNESCO Institute for Statistics (UIS)

References

IOC-UNESCO (2017), Global Ocean Science Report—The current status of ocean science around the world, L. Valdés et al. (eds), UNESCO Publishing, Paris

Isensee, K., Horn, L. and Schaaper, M. 2017. The funding for ocean science. In: In: IOC-UNESCO, Global Ocean Science Report—The current status of ocean science around the world. L. Valdés et al. (eds). Paris, UNESCO, pp. 80–97.

GOSR report (relevant chapters 2 and 4)

<http://en.unesco.org/gosr>

UNESCO Science Report 2010, 2015

https://en.unesco.org/unesco_science_report

IOC Assembly Decisions: IOC-XXIX/5.1. and IOC-XXIX/9.1.)

http://www.ioc-unesco.org/index.php?option=com_oe&task=viewDocumentRecord&docID=19770

IOC-XXIX/2 Annex 14

http://ioc-unesco.org/index.php?option=com_oe&task=viewDocumentRecord&docID=19589

R&D relevant data

<http://data.uis.unesco.org/>

Definition/Concepts: Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development' (OECD)

http://www.oecd.org/sti/inno/frascati/manual/proposed_standard_practice_for_surveys_on_research_and_experimental_development_6th_edition.htm

IOC Criteria and Guidelines on the Transfer of Marine Technology

<http://unesdoc.unesco.org/images/0013/001391/139193m.pdf>

Related indicators

Links to SDG 17, SDG 5;

Targets: to all other SDG 14 targets as science is crucial to protect and conserve the oceans' resources.

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.b: Provide access for small-scale artisanal fishers to marine resources and markets

Indicator 14.b.1: Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries

Institutional information

Organization(s):

Food and Agriculture Organisation of the United Nations

Concepts and definitions

Definition:

Progress by number of countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries.

Rationale:

Target 14.b focuses on access to resources and markets for small-scale fisheries, in line with the Rio+20 outcome document para, 175. In order to guarantee secure access, an enabling environment is necessary which recognizes and protects small-scale fisheries rights. Such an enabling environment has three key features:

1. Appropriate legal, regulatory and policy frameworks;
2. Specific initiatives to support small-scale fisheries; and
3. Related institutional mechanisms which allow for the participation of small-scale fisheries organisations in relevant processes.

The 32nd Session of the FAO Committee on Fisheries agreed that the data submitted through the Code of Conduct for Responsible Fisheries (CCRF) questionnaire could be used by Members for reporting on Sustainable Development Goals (SDGs) indicators.

The indicator variables are therefore chosen from three of the five questions on small-scale fisheries of the CCRF questionnaire to reflect these three aspects:

1. Are there any laws, regulations, policies, plans or strategies that specifically target or address the small-scale fisheries sector?
2. Are there any ongoing specific initiatives to implement the SSF Guidelines?
3. Does your country have an advisory/consultative body to the Ministry/Department of Fisheries in which fishers/fish workers can participate and contribute to decision-making processes?

The national indicator is calculated based on these questions specifically focusing on actual efforts of promoting and facilitating access rights to small scale fisheries.

Although the exact score will be important from one reporting year to the next for determining the progress made by a country, to aid the interpretation of this indicator, the score will then be converted into one of 5 bands as following:

Score	Bands
>0 –< 0.2	Band 1: Very low implementation of instruments for access to resources and markets for small-scale fisheries
0.2 –< 0.4	Band 2: Low implementation of instruments for access to resources and markets for small-scale fisheries
0.4 –< 0.6	Band 3: Medium implementation of instruments for access to resources and markets for small-scale fisheries
0.6 –< 0.8	Band 4: High implementation of instruments for access to resources and markets for small-scale fisheries
0.8 – 1.0	Band 5: Very high implementation of instruments for access to resources and markets for small-scale fisheries

Concepts:

National Statistical Systems already collect fisheries-relevant data, with a focus on production, employment, and trade. Relevant concepts can be found at [CWP Handbook of Fishery Statistical Standards](#) of the Coordinating Working Party on Fisheries Statistics (CWP).

Comments and limitations:

It should be noted that while target 14.b refers to access for small-scale artisanal fishers to marine resources and markets some landlocked countries with inland fisheries have taken the opportunity to report on this indicator.

Methodology

Computation Method:

The indicator is calculated using three variables, which are given respective weightings for the final calculation. There has not been a change in the calculation, nor the use of mixed sources.

Variable 1: Existence of laws, regulations, policies, plans or strategies that specifically target or address the small-scale fisheries sector

Variable 2: Ongoing specific initiatives to implement the SSF Guidelines

Variable 3: Existence of mechanisms enabling small-scale fishers and fish workers to contribute to decision-making processes

Performance is scored based on the country responses to the relevant portions of three questions included in the Code of Conduct for Responsible Fisheries Questionnaire (CCRF). These questions have been transformed into weighted variables for the purpose of calculating the country scores. The target has been set at a positive ('yes') response to all the sub-variables, resulting in a score of 1.

	Sub-variables	Weight
Variable 1	1.1	0.1

	Sub-variables	Weight
Variable 2	2.1	0.03

	1.2	0.1
	1.3	0.1
	1.4	0.1
	1.5	¹
	Variable weight	0.4

¹ Sub-variable 1.5 is only weighted when a response of 'yes' is provided along with supporting details in the text form.

	2.2	0.03
	2.3	0.03
	2.4	0.03
	2.5	0.03
	2.6	0.03
	2.7	0.03
	2.8	0.03
	2.9	0.03
	2.10	0.03
	Indicator weight	0.3

	<i>Sub-variables</i>	<i>Weight</i>
	3.1	0.3
Variable 3	Indicator weight	0.3

The higher weighting assigned to Variable 1 reflects the slightly greater importance of that indicator for assessing the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fishers.

Each sub-variable is scored on the basis of a 'yes' or 'no' response and any 'blank' or 'unknown' responses are scored as a 'no', or zero. A response of yes results in a score that corresponds with the full weighting value for that variable category. For example, a 'yes' response for variables 1.3, 2.1 and 3.1 are scored as 0.1, 0.03 and 0.3 respectively.

One exception is made in the case of sub-variable 1.5. This question allows a response of 'other' with an associated text field. A positive response in this field is only scored as a 'yes' in the case where the text field is also completed AND at least one of the other prior sub-variable were scored as 'no'. This allows the indicator weighting to remain consistent in all cases.

Once the specific score has been determined for each country, countries will be classified into a number of bands, ranging from a low to a high degree of implementation, and thus effectively translate a synthetic score into a tangible and intuitive metric for countries.

Disaggregation:

The disaggregation level is the national level. No demographic features are included in the indicators and are thus excluded from the consideration of level of disaggregation.

Treatment of missing values:

- [At country level](#)

The most appropriate methodology for producing estimates for the indicator when the country data are not available would be the use of expert consultation and judgement rather than the use of mathematical formula for data imputation. The use of expert judgement is a critical factor as the indicator assesses the state of management/ policy implementation at a national level, not values that could be readily inputted.

- [At regional and global levels](#)

Not applicable

Regional aggregates:

The categorization into the respective bands will also apply in the case of regional and global aggregates for this indicator. Once the mean score for an SDG region has been calculated, the region will be classified into a particular band reflecting the degree of implementation of relevant instruments.

Data is combined for the respective nations within a region, as a count of the number of countries by Band, and this can be further aggregated to the global level without the need for any weighting of national or regional scores.

Sources of discrepancies:

There might be differences between a national estimated based on an expert judgment, in case of country data is not available, and the answer a country would give via the self-assessment questionnaire. This can happen not only because the expert judgement represents the best approximation to the reality, but not the reality itself, and/or due to the well-known self-report bias verifiable in this type of surveys that means countries will by tendency report a better reality than the one indeed in place.

Methods and guidance available to countries for the compilation of the data at the national level:

- Data is collected through an electronic questionnaire submitted by FAO to the country focal points for the CCRF questionnaire, usually in the national fisheries administration. Data are validated upon intake of the questionnaires. No adjustments are required for the data for definitions nor for classification or demographic harmonization.

Quality assurance

- Data are checked for their correctness; completeness; consistency along the process of data entry, and/or through a specific statistical analysis as the yearly data set is closed.
- The indicator relies on data generated through the CCRF questionnaire which is filled in by countries on a biannual basis. To facilitate reporting of the CCRF-based SDG indicators, a tailor-made data processing tool has been developed within the framework of the existing CCRF questionnaire online platform. Upon submission of the questionnaire by the user, an indicator report will automatically be generated for final validation by the country.

Data Sources

Description:

Data is based on the replies to three questions of the CCRF questionnaire. It is usually provided from administrative sources, as best identified by the national fisheries administration responsible for replying to the CCRF questionnaire. The data is based on the presence of relevant laws, regulations, policies, plans

or strategies and how these have been implemented so both legislative, management, and other documentation must be consulted to respond to the queries.

Collection process:

The CCRF questionnaire is a web-based system, with related data processing tools and usability features. Data is collected from FAO member countries every two years to be reported at aggregated level on the occasion of the sessions of the FAO Committee on Fisheries (COFI), usually in the period November to March preceding the session of COFI. In 2016, for the 32nd Session of COFI, 92 countries and the European Union (EU) responded to the section on small-scale fisheries of the CCRF questionnaire, which includes the three questions providing the variables for indicator 14.b.1.

Data Availability

Description:

In 2016, 92 countries and the European Union replied to the questionnaire section on the three indicators to measure target performance for 14.b.1

Breakdown of the number of countries covered by region is as follows:

	Number of countries	Nature of data
World	120	G
Africa	26	G
Northern Africa	1	G
Sub-Saharan Africa	25	G
Eastern Africa	9	G
Middle Africa	6	G
Southern Africa	4	G
Western Africa	6	G
Americas	27	G
Latin America and the Caribbean	25	G
Caribbean	9	G
Latin America	14	G
Northern America	2	G
Asia	25	G
Central Asia	2	G
Eastern Asia	2	G
Southern Asia	6	G
South-Eastern Asia	8	G
Western Asia	8	G
Europe	35	G
Eastern Europe	8	G
Northern Europe	9	G
Southern Europe	9	G
Western Europe	9	G
Oceania	7	G
Australia and New Zealand	2	G
Melanesia	2	G
Micronesia	2	G

	Number of countries	Nature of data
Polynesia	1	G

Time series:

2016 (baseline)

Calendar

Data collection:

The next data collection cycle will be conducted and completed by May 2018.

Data release:

The data will be processed and released by July 2018.

Data providers

Data is typically provided by the National Fishery Ministries/departments.

Data compilers

FAO

References

URL:

- SDG 14.b <http://www.fao.org/sustainable-development-goals/indicators/14.b.1/en/>
- e-learning course on SDG indicator 14.b.1:
<http://www.fao.org/elearning/#/elc/en/course/SDG14B1>

References:32nd Session of the FAO Committee on Fisheries – relevant documents:

- <http://www.fao.org/3/a-mq663e.pdf>
- <http://www.fao.org/3/a-mq873e.pdf>
- <http://www.fao.org/3/a-bo076e.pdf>

Related indicators

Linkages with any other Goals and Targets: SDG 1, SDG 2 (in particular 2.3), SDG 5, SDG 12, SDG 13, SDG 14.2/4/5/6/7

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

[Indicator 14.4.1: Proportion of fish stocks within biologically sustainable levels](#)

Institutional information

Organization(s):

Food and Agriculture Organization of the United Nations (FAO)

Concepts and definitions

Definition:

The indicator Proportion of fish stocks within biologically sustainable levels measures the sustainability of the world's marine capture fisheries by their abundance. A fish stock of which abundance is at or greater than the level, that can produce the maximum sustainable yield (MSY) is classified as biologically sustainable. In contrast, when abundance falls below the MSY level, the stock is considered biologically unsustainable.

Rationale:

The indicator measure the sustainability of fish resources based on two major considerations: yield and reproduction. When a stock is fished biologically sustainable, it produces good yield without impairing the stock's reproductivity, reaching a good balance between human use and ecological conservation.

The proportion is just calculated based on stock numbers, without weighting either by its production volume or stock abundance, that is every fish stock is considered of the same importance.

Concepts:

Fish stock assessment science defines the long term sustainability of fish resources as their abundance is fished at the level that produces the maximum sustainable level. The basic benchmarks for the sustainability of fisheries are set by the UN Convention on the Law of the Sea (UNCLOS, Article 61(3)).

Comments and limitations:

The indicator measures the sustainability of fishery resources very well, and is an end-result measure of Target 14.2. However, its derivation is not only data hungry, but also technically demanding as it needs stock assessment. This is also the reason why there is no data at country level.

Methodology

Computation Method:

Fishery sustainability is defined based on stock abundance. To know stock abundance, one needs to carry out stock assessment that uses fish catch statistics, fishing effort data and biological information and fit the data to a population dynamics model. After completing stock assessment for all stocks concerned, fish stocks that have abundance at or above the level associated with the maximum sustainable yield are counted as biologically sustainable, and otherwise are considered as overfished.

Disaggregation:

Disaggregation by country is not possible for the moment.

Treatment of missing values:

- [At country level](#)

No interpolation is carried out for missing data.

- [At regional and global levels](#)

A fixed number of fish stocks is monitored and assessed in terms of their stock.

Sources of discrepancies:

NA, as there is no national data.

Methods and guidance available to countries for the compilation of the data at the national level:

The concept of “within biologically sustainable levels” means that abundance of the fish stock is at or higher than the level that can produce the maximum sustainable yield.

We estimated 584 fish stocks around world since 1974, representing 70% of global landings. Each stock was estimated using the method described in FAO Technical Paper 569 (<http://www.fao.org/docrep/015/i2389e/i2389e.pdf>). If the stock has abundance below the level that can produce maximum sustainable yield, it was counted as overfished. The indicator measures the % of the assessed stocks are within biologically sustainable levels.

However, no such assessments have been done at country level and no methods and guidance of assessment at country level have been established because stock assessment requires numerical modelling skills and is highly data demanding so that the majority of developing countries do not have the capacity of carrying out its own stock assessment.

Quality assurance:

NA

Data Sources

Stock assessment needs several different kinds of data that come from different sources. For example, catch data are often reported to FAO by member countries, but fishing effort data and other biological data may come from other sources. A great effort must be made to collect data that are needed for stock assessment. Also, it is worth noting that this indicator cannot be directly calculated from the data, but only through stock assessment which is a mathematical modelling process.

Data Availability

Description:

The indicator has global data from 1974 to 2013. There is not systematic country data available. Regional breakdown by continent is impossible as fish live in the sea. However, it is possible to break it down to oceans or by FAO statistical regions.

Time series:

From 1974 to 2013

Calendar

Data collection:

2013, 2015 and so on (every another year)

Data release:

2013, 2015 and so on (every another year).

Data providers

FAO

Data compilers

FAO

References

URL:

<http://www.fao.org>

References:

<http://www.fao.org/docrep/015/i2389e/i2389e00.htm>

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

[Indicator 14.5.1: Coverage of protected areas in relation to marine areas](#)

Institutional information

Organization(s):

UN Environment World Conservation Monitoring Centre (UNEP-WCMC)

BirdLife International (BLI)

International Union for Conservation of Nature (IUCN)

Concepts and definitions

Definition:

The indicator Coverage of protected areas in relation to marine areas shows temporal trends in the mean percentage of each important site for marine biodiversity (i.e., those that contribute significantly to the global persistence of biodiversity) that is covered by designated protected areas.

Rationale:

The safeguard of important sites is vital for stemming the decline in biodiversity and ensuring long term and sustainable use of marine natural resources. The establishment of protected areas is an important mechanism for achieving this aim, and this indicator serves as a means of measuring progress toward the conservation, restoration and sustainable use of marine ecosystems and their services, in line with obligations under international agreements. Importantly, while it can be disaggregated to report on any given single ecosystem of interest, it is not restricted to any single ecosystem type.

Levels of access to protected areas vary among the protected area management categories. Some areas, such as scientific reserves, are maintained in their natural state and closed to any other use. Others are used for recreation or tourism, or even open for the sustainable extraction of natural resources. In addition to protecting biodiversity, protected areas have high social and economic value: supporting local livelihoods; maintaining fisheries; harbouring an untold wealth of genetic resources; supporting thriving recreation and tourism industries; providing for science, research and education; and forming a basis for cultural and other non-material values.

This indicator adds meaningful information to, complements and builds from traditionally reported simple statistics of marine area covered by protected areas, computed by dividing the total protected area within a country by the total territorial area of the country and multiplying by 100 (e.g., Chape et al. 2005). Such percentage area coverage statistics do not recognise the extreme variation of biodiversity importance over space (Rodrigues et al. 2004), and so risk generating perverse outcomes through the protection of areas which are large at the expense of those which require protection.

The indicator is used to track progress towards the 2011–2020 Strategic Plan for Biodiversity (CBD 2014, Tittensor et al. 2014), and was used as an indicator towards the Convention on Biological Diversity's 2010 Target (Butchart et al. 2010).

Concepts:

Protected areas, as defined by the International Union for Conservation of Nature (IUCN; Dudley 2008), are clearly defined geographical spaces, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Importantly, a variety of specific management objectives are recognised within this definition, spanning conservation, restoration, and sustainable use:

- Category Ia: Strict nature reserve
- Category Ib: Wilderness area
- Category II: National park
- Category III: Natural monument or feature
- Category IV: Habitat/species management area
- Category V: Protected landscape/seascape
- Category VI: Protected area with sustainable use of natural resources

The status "designated" is attributed to a protected area when the corresponding authority, according to national legislation or common practice (e.g., by means of an executive decree or the like), officially endorses a document of designation. The designation must be made for the purpose of biodiversity conservation, not de facto protection arising because of some other activity (e.g., military).

Sites contributing significantly to the global persistence of biodiversity are identified following globally standard criteria for the identification of Key Biodiversity Areas (IUCN 2016) applied at national levels. Two variants of these standard criteria have been applied in all countries to date. The first is for the identification of Important Bird & Biodiversity Areas, that is, sites contributing significantly to the global persistence of biodiversity, identified using data on birds, of which >12,000 sites in total have been identified from all of the world's countries (BirdLife International 2014). The second is for the identification of Alliance for Zero Extinction sites (Ricketts et al. 2005), that is, sites holding effectively the entire population of at least one species assessed as Critically Endangered or Endangered on the IUCN Red List of Threatened Species. In total, 587 Alliance for Zero Extinction sites have been identified for 920 species of mammals, birds, amphibians, reptiles, conifers, and reef-building corals. A global standard for the identification of Key Biodiversity Areas unifying these approaches along with other mechanisms for identification of important sites for other species and ecosystems was approved by IUCN (2016).

Comments and limitations:

Quality control criteria are applied to ensure consistency and comparability of the data in the World Database on Protected Areas. New data are validated at UNEP-WCMC through a number of tools and translated into the standard data structure of the World Database on Protected Areas. Discrepancies between the data in the World Database on Protected Areas and new data are minimised by provision of a manual (UNEP-WCMC 2016) and resolved in communication with data providers. Similar processes apply for the incorporation of data into the World Database of Key Biodiversity Areas.

The indicator does not measure the effectiveness of protected areas in reducing biodiversity loss, which ultimately depends on a range of management and enforcement factors not covered by the indicator. A

number of initiatives are underway to address this limitation. Most notably, numerous mechanisms have been developed for assessment of protected area management, which can be synthesised into an indicator (Leverington et al. 2010). This is used by the Biodiversity Indicators Partnership as a complementary indicator of progress towards Aichi Biodiversity Target 11 (<http://www.bipindicators.net/pamanagement>). However, there may be little relationship between these measures and protected area outcomes (Nolte & Agrawal 2013). More recently, approaches to “green listing” have started to be developed, to incorporate both management effectiveness and the outcomes of protected areas, and these are likely to become progressively important as they are tested and applied more broadly.

Data and knowledge gaps can arise due to difficulties in determining whether a site conforms to the IUCN definition of a protected area, and some protected areas are not assigned management categories. Moreover, “other effective area-based conservation measures”, as specified by Aichi Biodiversity Target 11 of the Strategic Plan for Biodiversity 2011–2020, recognise that some sites beyond the formal protected area network, while not managed primarily for nature conservation, may nevertheless be managed in ways which are consistent with the persistence of the biodiversity for which they are important (Jonas et al. 2014). However, standard approaches to documentation of “other effective area-based conservation measures” are still under debate through the IUCN Task Force on Other Effective Areas Based Conservation Measures which will conclude with recommendations for a definition on OEMCs. Once defined it is likely OEMCs will be documented in the World Database on Protected Areas.

Regarding important sites, the biggest limitation is that site identification to date has focused on specific subsets of biodiversity, for example birds (for Important Bird and Biodiversity Areas) and highly threatened species (for Alliance for Zero Extinction sites). While Important Bird and Biodiversity Areas have been documented to be good surrogates for biodiversity more generally (Brooks et al. 2001, Pain et al. 2005), the application of the unified standard for identification of Key Biodiversity Areas (IUCN 2016) sites across different levels of biodiversity (genes, species, ecosystems) and different taxonomic groups remains a high priority, building from efforts to date (Eken et al. 2004, Knight et al. 2007, Langhammer et al. 2007, Foster et al. 2012).

Key Biodiversity Area identification has been validated for a number of countries and regions where comprehensive biodiversity data allow formal calculation of the site importance (or “irreplaceability”) using systematic conservation planning techniques (Di Marco et al. 2016, Montesino Pouzols et al. 2014).

Future developments of the indicator will include: a) expansion of the taxonomic coverage of marine Key Biodiversity Areas through application of the Key Biodiversity Areas standard (IUCN 2016) to a wide variety of marine vertebrates, invertebrates, plants and ecosystem type; b) improvements in the data on protected areas by continuing to increase the proportion of sites with documented dates of designation and with digitised boundary polygons (rather than coordinates); and c) exploring other methods for assessing and presenting temporal trends in protected area coverage.

Methodology

Computation Method:

This indicator is calculated from data derived from a spatial overlap between digital polygons for protected areas from the World Database on Protected Areas (IUCN & UNEP-WCMC 2017) and digital

polygons for marine Key Biodiversity Areas (from the World Database of Key Biodiversity Areas, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and other Key Biodiversity Areas; available through the [Integrated Biodiversity Assessment Tool](#)). The value of the indicator at a given point in time, based on data on the year of protected area establishment recorded in the World Database on Protected Areas, is computed as the mean percentage of each Key Biodiversity Area currently recognised that is covered by protected areas.

Year of protected area establishment is unknown for 12% of protected areas in the World Database on Protected Areas, generating uncertainty around changing protected area coverage over time. To reflect this uncertainty, a year was randomly assigned from another protected area within the same country, and then this procedure repeated 1,000 times, with the median plotted. In 2017 we slightly changed the methods described by Butchart et al. (2012, 2015) by randomly assigning a year to protected areas with no year of establishment before calculating trends in coverage. This is a computationally more efficient method and is likely to reflect more accurately changes in protected area coverage over time.

Previously the indicator was presented as the percentage of Key Biodiversity Areas completely covered by protected areas. However, it is now presented as the mean % of each Key Biodiversity Area that is covered by protected areas in order to better reflect trends in protected area coverage for countries or regions with few or no Key Biodiversity Areas that are completely covered.

Disaggregation:

Given that data for the global indicator are compiled at national levels, it is straightforward to disaggregate to national and regional levels (e.g., Han et al. 2014), or conversely to aggregate to the global level. Key Biodiversity Areas span all ecosystem types through the marine environment (Edgar et al. 2008) and beyond. The indicator can therefore be reported in combination across marine systems along with terrestrial or freshwater systems, or disaggregated among them. However, individual Key Biodiversity Areas can encompass marine, terrestrial, and freshwater systems simultaneously, and so determining the results is not simply additive. Finally, the indicator can be disaggregated according to different protected area management categories (categories I–VI) to reflect differing specific management objectives of protected areas.

In addition to the aggregation of the coverage of protected areas across important sites for marine biodiversity as an indicator towards SDG 14.5, other disaggregations of coverage of protected areas of particular relevance as indicators towards SDG targets (Brooks et al. 2016) include:

SDG 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type.

SDG 15.4.1 Coverage by protected areas of important sites for mountain biodiversity.

Protected area coverage data can be combined with other data sources to yield further, complementary, indicators. For example, protected area overlay with eco-regional maps can be used to provide information on protected area coverage of different broad biogeographical regions. Protected area coverage of the distributions of different groups of species (e.g., mammals, birds) can similarly provide indicators of trends in coverage of biodiversity at the species level. Protected area coverage can be combined with the Red List Index to generate indicators of the impacts of protected areas in reducing biodiversity loss (Butchart et al. 2012). Finally, indicators derived from protected area overlay can also

inform sustainable urban development; for example, the overlay of protected areas onto urban maps could provide an indicator of public space as a proportion of overall city space.

Treatment of missing values:

- **At country level**

Data are available for protected areas and Key Biodiversity Areas in all of the world's countries, and so no imputation or estimation of national level data is necessary.

- **At regional and global levels**

Global indicators of protected area coverage of important sites for biodiversity are calculated as the mean percentage of each Key Biodiversity Area that is covered by protected areas. The data are generated from all countries, and so while there is uncertainty around the data, there are no missing values as such and so no need for imputation or estimation.

Regional aggregates:

UNEP-WCMC is the agency in charge of calculating and reporting global and regional figures for this indicator, working with BirdLife International and IUCN to combine data on protected areas with those for sites of importance for biodiversity. UNEP-WCMC aggregates the global and regional figures on protected areas from the national figures that are calculated from the World Database on Protected Areas and disseminated through Protected Planet. The World Database on Protected Areas and Protected Planet are jointly managed by UNEP-WCMC and IUCN and its World Commission on Protected Areas. The World Database on Protected Areas is held within a Geographic Information System that stores information about protected areas such as their name, size, type, date of establishment, geographic location (point) and/or boundary (polygon). Protected area coverage is calculated using all the protected areas recorded in World Database on Protected Areas whose location and extent is known. Protected areas without digital boundaries are excluded from the indicator.

Important Bird and Biodiversity Areas are sites of international significance for the conservation of biodiversity, identified using data for birds. Important Bird and Biodiversity Areas are identified using a standardised set of data-driven criteria and thresholds, relating to threatened, restricted-range, biome-restricted and congregatory species. Important Bird and Biodiversity Areas are delimited so that, as far as possible, they: (a) are different in character, habitat or ornithological importance from surrounding areas; (b) provide the requirements of the trigger species (i.e., those for which the site qualifies) while present, alone or in combination with networks of other sites; and (c) are or can be managed in some way.

Alliance for Zero Extinction sites meet three criteria: endangerment (supporting at least one Endangered or Critically Endangered species, as listed on The IUCN Red List of Threatened Species); irreplaceability (holding the sole or overwhelmingly significant (=95%) known population of the target species, for at least one life history segment); and discreteness (having a definable boundary within which the character of habitats, biological communities, and/or management issues have more in common with each other than they do with those in adjacent areas). Hence Alliance for Zero Extinction sites represent locations at which species extinctions are imminent unless appropriately safeguarded (i.e. protected or managed sustainably in ways consistent with the persistence of populations of target species).

The Important Bird and Biodiversity Area and Alliance for Zero Extinction site networks are, by definition, areas of particular importance for biodiversity as referred to in Aichi Biodiversity Target 11, and represent

the only networks of such sites that have been identified systematically worldwide. Hence, they represent important areas to consider designating as formal protected areas.

Sources of discrepancies:

National processes provide the great bulk of the data that are subsequently aggregated into both the World Database on Protected Areas and the World Database of Key Biodiversity Areas, and so there are very few differences between national indicators and the global one. One minor source of difference is that the World Database on Protected Areas incorporates internationally-designated protected areas (e.g., World Heritage sites, Ramsar sites, etc), a few of which are not considered by their sovereign nations to be protected areas.

Note that because countries do not submit comprehensive data on degazetted protected areas to the WDPA, earlier values of the indicator may marginally underestimate coverage.

Methods and guidance available to countries for the compilation of the data at the national level:

The WDPA has its origins in a 1959 UN mandate when the United Nations Economic and Social Council called for a list of national parks and equivalent reserves Resolution 713 (XXVIII). More details are available here: <https://www.protectedplanet.net/c/world-database-on-protected-areas>. The UN List of Protected Areas has been published in 1961/62, 1966/71, 1972 (addendum to the 1966/71 edition), 1973, 1974, 1975, 1980, 1982, 1985, 1990, 1993, 1997, 2003 and 2014 which have resulted in a global network of national data providers for the WDPA. For example, in 2014 all Convention on Biological Diversity (CBD) National Focal points and all National Focal points for the CBD Protected Areas Programme of Work (PoWPA) to request data for the 2014 Un List of Protected Areas (<https://www.protectedplanet.net/c/united-nations-list-of-protected-areas/united-nations-list-of-protected-areas-2014>). Protected areas data is therefore compiled directly from government agencies, regional hubs and other authoritative sources in the absence of a government source. All records have a unique metadata identifier (MetadataID) which links the spatial database to the Source table where all sources are described. The data is collated and standardised following the WDPA Data Standards and validated with the source. The process of collation, validation and publication of data as well as protocols and the WDPA data standards are regularly updated in the WDPA User Manual (<https://www.protectedplanet.net/c/wdpa-manual>) made available through www.protectedplanet.net where all spatial data and the Source table are also published every month and can be downloaded. The process for compilation of data on sites contributing significantly to the global persistence of biodiversity (Key Biodiversity Areas) is documented online (<http://www.keybiodiversityareas.org/home>). Specifically, (<http://www.keybiodiversityareas.org/what-are-kbas>), the Key Biodiversity Area identification process is a highly inclusive, consultative and bottom-up exercise. Although anyone with appropriate scientific data may propose a site to qualify as a Key Biodiversity Area, wide consultation with stakeholders at the national level (both non-governmental and governmental organizations) is required during the proposal process. Key Biodiversity Area identification builds off the existing network of Key Biodiversity Areas, including those identified as Important Bird & Biodiversity Areas through the BirdLife Partnership of 120 national organisations (<http://www.birdlife.org/worldwide/partnership/birdlife-partners>), for the Alliance for Zero Extinction by 93 national and international organisations (<http://www.zeroextinction.org/partners.html>), and as other Key Biodiversity Areas by civil society organisations supported by the Critical Ecosystem Partnership Fund in developing ecosystem profiles, named in each of the profiles listed here (http://www.cepf.net/resources/publications/Pages/ecosystem_profiles.aspx), with new data strengthening and expanding the network of these sites. Any site proposal undergoes

independent scientific review. This is followed by the official site nomination with full documentation meeting the Documentation Standards for Key Biodiversity Areas. Sites confirmed by the Key Biodiversity Areas Secretariat to qualify as Key Biodiversity Areas then appear on the Key Biodiversity Areas website (<http://www.keybiodiversityareas.org/home>).

The WDPA User Manual (<https://www.protectedplanet.net/c/wdpa-manual>) published in English, Spanish, and French provides guidance to countries on how to submit protected areas data to the WDPA, what are the benefits of providing such data, which are the data standards and which quality checks are performed. We also provide a summary of our methods to calculate protected areas coverage to all WDPA users: <https://www.protectedplanet.net/c/calculating-protected-area-coverage>. The “Global Standard for the Identification of Key Biodiversity Areas” (<https://portals.iucn.org/library/node/46259>) comprises the standard recommendations available to countries in the identification of Key Biodiversity Areas, with further guidelines available on the Key Biodiversity Areas website (<http://www.keybiodiversityareas.org/home>). Specifically (<http://www.keybiodiversityareas.org/get-involved>), the main steps of the Key Biodiversity Area identification process are the following:

- i) submission of Expressions of Intent to identify a Key Biodiversity Area to Regional Focal Points;
- ii) Proposal Development process, in which proposers compile relevant data and documentation and consult national experts, including organizations that have already identified Key Biodiversity Areas in the country, either through national Key Biodiversity Area Coordination Groups or independently;
- iii) review of proposed Key Biodiversity Areas by Independent Expert Reviewers, verifying the accuracy of information within their area of expertise; and
- iv) a Site Nomination phase comprising the submission of all the relevant documentation for verification by the Key Biodiversity Areas Secretariat (see section 3.3 below).

Once a Key Biodiversity Area is identified, monitoring of its qualifying features and its conservation status is important. Proposers, reviewers and those undertaking monitoring can join the Key Biodiversity Areas Community to exchange their experiences, case studies and best practice examples.

Quality assurance

The process on how the data is collected, standardised and published is available in the WDPA User Manual at: <https://www.protectedplanet.net/c/wdpa-manual> which is available in English, French and Spanish. Specific guidance is provided at <https://www.protectedplanet.net/c/world-database-on-protected-areas> on, for example, predefined fields or look up tables in the WDPA: <https://www.protectedplanet.net/c/wdpa-lookup-tables>, how WDPA records are coded how international designations and regional designations data is collected, how regularly is the database updated, and how to perform protected areas coverage statistics. The process of identification of Key Biodiversity Areas is supported by the Key Biodiversity Areas Partnership (<http://www.keybiodiversityareas.org/kba-partners>). Among the roles of the partnership is establishment of the Key Biodiversity Areas Secretariat, which checks information submitted in the Site Nomination phase for the correct application of the Key Biodiversity Areas Standard (<https://portals.iucn.org/library/node/46259>), and the adequacy of site documentation and then verifies the site, which is then published on the Key Biodiversity Areas Website (<http://www.keybiodiversityareas.org/get-involved>). In addition, the Chairs of the IUCN Species Survival Commission and World Commission on Protected Areas (both of whom are elected by the IUCN Membership of governments and non-governmental organisations), appoint the Chair of an independent Key Biodiversity Areas Standards and Appeals Committee, which ensures the correct application of the Global Standard for the identification of Key Biodiversity Areas. The R code for calculating protected area

coverage of KBAs is documented as Dias, M. (2017) “R code for calculating protected area coverage of KBAs”.

(http://www.keybiodiversityareas.org/userfiles/files/R_code_for_calculating_protected_area_coverage_of_KBAs_March_2017.pdf).

In addition to dissemination via the Protected Planet website (<https://www.protectedplanet.net/>), the UN List process described in 3.1 the fact that protected areas data is collected from national agencies acknowledged in the WDPA metadata, and Key Biodiversity Areas website (<http://www.keybiodiversityareas.org/home>), Protected Planet and Key Biodiversity Areas data are disseminated through the Integrated Biodiversity Assessment Tool, available for research and conservation online (<https://www.ibat-alliance.org/ibat-conservation/>). This incorporates Country Profile documents for all of the world’s countries, which includes documentation of the indicator of protected area coverage of Key Biodiversity Areas for the current year, starting from 2016. The first edition of each of these Country Profiles was sent for consultation to National Focal Points of the Convention on Biological Diversity (<https://www.cbd.int/information/nfp.shtml>), at the 13th meeting of the Conference of the Parties of the Convention on Biological Diversity; and this process will be repeated annually.

Data Sources

Description:

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Protected Areas data for sites designated under the Ramsar Convention and the UNESCO World Heritage Convention are collected through the relevant convention international secretariats. Protected area data are aggregated globally into the World Database on Protected Areas by the UN Environment World Conservation Monitoring Centre, according to the mandate for production of the United Nations List of Protected Areas (Deguignet et al. 2014). They are disseminated through [Protected Planet](#), which is jointly managed by UNEP-WCMC and IUCN and its World Commission on Protected Areas (UNEP-WCMC 2016).

Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds. Key Biodiversity Areas data are aggregated into the [World Database on Key Biodiversity Areas](#), managed by BirdLife International. Specifically, data on Important Bird and Biodiversity Areas are available online at [BirdLife International \(2016\)](#) and data on Alliance for Zero Extinction sites are available online at [AZE \(2010\)](#). Both datasets, along with Key Biodiversity Areas identified through other processes, are available through the [World Database on Key Biodiversity Areas](#), and along with the World Database on Protected Areas, are also disseminated through the [Integrated Biodiversity Assessment Tool for Research and Conservation Planning](#).

Collection process:

See information under other sections.

Data Availability

Description:

This indicator has been classified by the IAEG-SDGs as Tier 1. Current data are available for all countries in the world, and these are updated on an ongoing basis.

Time series:

~150 years

Calendar

Data collection:

UNEP-WCMC produces the UN List of Protected Areas every 5–10 years, based on information provided by national ministries/agencies. In the intervening period between compilations of UN Lists, UNEP-WCMC works closely with national ministries/agencies and NGOs responsible for the designation and maintenance of protected areas, continually updating the WDPA as new data become available. The World Database of Key Biodiversity Areas is also updated on an ongoing basis, as new national data are submitted.

Data release:

The indicator of protected area coverage of important sites for biodiversity is anticipated to be released annually.

Data providers

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds.

Data compilers

Name:

UNEP-WCMC and IUCN

Description:

Protected area data are aggregated globally into the World Database on Protected Areas by the UN Environment World Conservation Monitoring Centre, according to the mandate for production of the United Nations List of Protected Areas (Deguignet et al. 2014). They are disseminated through [Protected Planet](#), which is jointly managed by UNEP-WCMC and IUCN and its World Commission on Protected Areas (UNEP-WCMC 2016). Key Biodiversity Areas data are aggregated into the [World Database on Key Biodiversity Areas](#), managed by BirdLife International (2017). Specifically, data on Important Bird and Biodiversity Areas are available online at [BirdLife International \(2016\)](#) and data on Alliance for Zero Extinction sites are available online at [AZE \(2010\)](#). Both datasets, along with the World Database on Protected Areas, are also disseminated through the [Integrated Biodiversity Assessment Tool for Research and Conservation Planning](#).

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URL:

<http://www.unep-wcmc.org/>; <http://www.birdlife.org/>; <http://www.iucn.org/>

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Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.6: By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

[Indicator 14.6.1: Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing](#)

Institutional information

Organization(s):

Food and Agriculture Organisation of the United Nations

Concepts and definitions

Definition:

Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing.

Rationale:

The purpose of this indicator is to show a picture of the state of implementation of the instruments to combat IUU fishing, at a national, regional and global level. The first edition of the indicator will provide a baseline of the current state of implementation of these agreements. Subsequent indicator estimates will then be able to show any progress made by countries.

Although the exact score will be important from one reporting year to the next for determining the progress made by a country, to aid the interpretation of this indicator, the score will then be converted into one of five bands as following:

Score	Bands
>0 –< 0.2	Band 1: Very low implementation of applicable instruments to combat IUU fishing
0.2 –< 0.4	Band 2: Low implementation of applicable instruments to combat IUU fishing
0.4 –< 0.6	Band 3: Medium implementation of applicable instruments to combat IUU fishing
0.6 –< 0.8	Band 4: High implementation of applicable instruments to combat IUU fishing
0.8 – 1.0	Band 5: Very high implementation of applicable instruments to combat IUU fishing

Additionally, a State may receive an indicator score of “N/A”, in the case that none of the instruments are applicable. This would only be the case if the country is land locked and does not flag any vessels that conduct fishing or fishing related activities.

Countries that do not submit a response to the questionnaire on which the indicator is based or do not approve the use of their responses to the questionnaire for use in this indicator, will not receive an indicator score.

Concepts:

The definitions and concepts associated with the indicator and utilized in the methodology are defined in the FAO term portal: <http://www.fao.org/faoterm/collection/fisheries/en/>

This indicator is based on a country’s implementation of the different international instruments that combat illegal, unreported and unregulated fishing (IUU fishing). IUU fishing undermines national and regional efforts to conserve and manage fish stocks and, as a consequence, inhibits progress towards achieving the goals of long-term sustainability and responsibility as set forth in, inter alia, Chapter 17 of Agenda 21 and the 1995 FAO Code of Conduct for Responsible Fisheries. Moreover, IUU fishing greatly disadvantages and discriminates against those fishers that act responsibly, honestly and in accordance with the terms of their fishing authorizations. This is a compelling reason why IUU fishing must be dealt with expeditiously and in a transparent manner. If IUU fishing is not curbed, and if IUU fishers target vulnerable stocks that are subject to strict management controls or moratoria, efforts to rebuild those stocks to healthy levels will not be achieved. To efficiently curb the IUU fishing a number of different international instruments have been developed over the years that focus on the implementation of the different responsibilities of States.

The instruments covered by this indicator and their role in combatting IUU fishing are as follows:

- **The 1982 United Nations Convention on the Law of the Sea (UNCLOS)**

This instrument is the basis upon which all the subsequent instruments are built upon. UNCLOS defines the rights and responsibilities of nations with respect to their use of the world’s oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. It is a binding instrument, although its principles may also be applied by countries who are not party to it.

- **The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement)**

The UN Fish Stocks Agreement entered into force on 11 December 2001, and is the most comprehensive of the binding international instruments in defining the role of Regional Fisheries Management Organisations and elaborating measures that could be taken in relation to IUU fishing activities. Although the UN Fish Stocks Agreement applies primarily to the highly migratory and straddling fish stocks on the high seas, its broad acceptance and application is evidenced by the reinforcement of other international instruments, implementation at the regional level, and to some extent by State practice within areas of national jurisdiction.

- **The International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)**

The objective of the IPOA is to prevent, deter and eliminate IUU fishing by providing all States with comprehensive, effective and transparent measures by which to act, including through appropriate regional fisheries management organizations established in accordance with international law. This instrument covers all the aspects of a State's responsibilities including, flag State responsibilities, coastal State measures, port State measures, internationally agreed market-related measures, research and regional fisheries management organizations.

- **The 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA)**

The FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing entered into force on the 5th of June 2016. The main purpose of the Agreement is to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing through the implementation of robust port State measures. The Agreement envisages that parties, in their capacities as port States, will apply the Agreement in an effective manner to foreign vessels when seeking entry to ports or while they are in port. The application of the measures set out in the Agreement will, inter alia, contribute to harmonized port State measures, enhanced regional and international cooperation and block the flow of IUU-caught fish into national and international markets.

- **The FAO Voluntary Guidelines for Flag State Performance (VG-FSP)**

The FAO Voluntary Guidelines for Flag State Performance spell out a range of actions that countries can take to ensure that vessels registered under their flags do not conduct IUU fishing, including monitoring, control and surveillance (MCS) activities, such as vessel monitoring systems (VMS) and observers. They promote information exchange and cooperation among countries so that flag states are in a position to refuse to register vessels that are "flag-hopping" by attempting to register with another flag state or to refuse vessels that have been reported for IUU fishing. The Guidelines also include recommendations on how countries can encourage compliance and take action against non-compliance by vessels, as well as on how to enhance international cooperation to assist developing countries to fulfil their flag state responsibilities.

- **The FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement)**

The 1993 FAO Compliance Agreement entered into force on the 24th of April 2003. Its main purpose is to encourage countries to take effective action, consistent with international law, and to deter the reflagging of vessels by their nationals as a means of avoiding compliance with applicable conservation and management rules for fishing activities on the high seas. With respect to the role of RFBs, the preamble calls upon States which do not participate in global, regional or sub regional fishery organizations or arrangements to do so, with a view to achieving compliance with international conservation and management measures.

Comments and limitations:

Aside from the status of a country as party or non-party to an international agreement which is available as public record, the indicator is a self-analysis by the country of their state of implementation of the various international instruments. Although questions in the questionnaire will be accompanied by pop up guides describing any technical aspects or terms, there may be a small variance in interpretation by different respondents.

Additionally, due to the fact that responses are not provided by an independent source, responses could in theory be politically influenced.

Methodology

Computation Method:

The indicator is based upon responses by States to a certain sections of the questionnaire for monitoring the implementation of the Code of Conduct for Responsible Fisheries and related instruments (CCRF). These are sections covering the implementation of different international instruments used to combat IUU fishing. The responses will be converted using an algorithm to obtain a score for the indicator. Each instrument will be covered within a given variable, as follows:

Variable 1 (V1) - Adherence and implementation of the 1982 United Nations Convention on the Law of the Sea

Variable 2 (V2) - Adherence and implementation of the 1995 United Nations Fish Stocks Agreement

Variable 3 (V3) - Development and implementation of a national plan of action (NPOA) to combat IUU fishing in line with the IPOA-IUU

Variable 4 (V4) - Adherence and implementation of the 2009 FAO Agreement on Port State Measures (PSMA)

Variable 5 (V5) - Implementation of Flag State Responsibilities in the context of the 1993 FAO Compliance Agreement and FAO Voluntary Guidelines for Flag State Performance

Depending on responses by FAO Members on the adherence and implementation of the above-mentioned instruments, States will score an indicator value between 0 and 1. Each variable is given a weighting, which takes into consideration the importance of the instrument in combating IUU fishing as well as the overlap between the instruments. The variable weightings are as follows:

Variable	Weighting*
V1	10%
V2	10%
V3	30%
V4	30%
V5	20%

(*) item on "Applicability of instruments"

For binding agreements, States will still be able to score points if they are not party to the agreement but are implementing its provisions. States will also score points if they have initiated the process to becoming party to an agreement.

This indicator is automatically computed within the web-application on which the countries will be responding to the questionnaire. Once the questionnaire is completed the respondent will be presented with a report of the indicator, describing the methodology and the score attained. The user will then be able to give a final confirmation of the indicator. The final scores from all the respondents will automatically be collected onto a database. This web-application will also allow the user to access in any the following languages: English, French, Spanish, Chinese, Arabic and Russian.

Choice of weighting per variable:

The weightings for each variable have been carefully selected. These have been determined based upon their importance of their role in combatting IUU fishing as well as in consideration of the overlap present in between the different instruments. It is also for this consideration of overlap that the VG-FSP and the Compliance Agreement have been combined into Variable 5.

Applicability of instruments:

A set of questions will be present to determine certain characteristics of States (coastal, port, flag and land-locked). This will ensure that the indicator scoring for a country is not negatively affected if an instrument is not applicable to them. In such case, the weighing of the variable that is not applicable is redistributed into the remaining variables. In cases where none of the instruments is applicable, the country will get an indicator score of "N/A".

Variable	Cases in which Instruments are not applicable
V1	The only case where this instrument becomes not applicable, is when the State is land-locked and they are not a flag state.
V2	Is not applicable if the country is land-locked and not a flag State or a coastal State but is not a flag State or Port State.
V3	Same as Variable 2.
V4	Same as Variable 2.
V5	Is not applicable if the country is not a flag State.

For more details regarding the list of question, scoring and applicability, please refer to Appendix 1 and 2.

Disaggregation:

Due to nature of indicator, there will only be one score per country which could then be aggregated regionally or globally.

Treatment of missing values:

- **At country level**
Indicator will only be available for responding countries who approve of the use of their responses to the CCRF questionnaire for this indicator.
- **At regional and global levels**
Data will only be aggregated from responding countries.

Regional aggregates:

Regional and global aggregates for this indicator will count the number of countries within a region or globally that fall under each of the five bands, as a proportion of the countries within a region or globally that have reported this indicator. This approach better illustrates the distribution of scores in each region and avoids determining a mean score for a region that assumes that non-reporting countries are equal to the mean, which would not be appropriate for a means-of-implementation type indicator like this.

Sources of discrepancies:

Data for this indicator is not internationally estimated.

Methods and guidance available to countries for the compilation of the data at the national level:

Once the countries receive the questionnaire, they will have access to a manual that will guide the user along the best process for completing the questionnaire. Due to the various themes that are covered within the questionnaire, it is essential that the focal point or user gather the responses using a well-coordinated process involving all the relevant staff that are in charge of the work within the various themes contained within the questionnaire, such as the focal point for the indicator. Additionally, the manual will also have a section describing the methodology of the indicator.

Within the questionnaire application, the user will be able to find pop up guides embedded in the application describing technical aspects or terms encountered.

URL to the authenticated CCRF questionnaire application: [FAO Questionnaire for Monitoring the Implementation of the Code of Conduct for Responsible Fisheries and Related Instruments](#)

Quality assurance

The questionnaire was created upon the request of the Members to the Committee on Fisheries. Within this process, FAO would not be in a position to question the responses of countries. Equally, this would require independent analysis of the status of implementation in the field of all responding countries for every edition of the questionnaire, a task that would require a substantial outlay of resources.

FAO is however carrying out national and regional workshops on the implementation of international instruments to combat IUU fishing. During these workshops, the indicator is used a tool to understand the situation within the countries, all the while ensuring that there is a clear understanding of the questions or any other technical aspects relevant to this indicator.

Furthermore, once the user has completed the questionnaire, the user is able to extract a report of the indicator detailing their responses to the relevant questions and the corresponding scoring. The questionnaire respondent will then be able to validate the indicator score, which will in turn be automatically stored onto FAO databases. This system has been put in place, not only to ensure that no mistakes were made during the completion of the questionnaire but also to ensure transparency of the indicator process.

Data Sources

Description:

For the complete list of questions used for this indicator, please refer to appendix 1.

The questionnaire is sent out to all FAO member States on a biennial basis. The questions used for this indicator will be included into the Committee on Fisheries Questionnaire for monitoring the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries and related instruments.

Collection process:

This questionnaire is run on a web-application, which automatically records the submissions from the countries onto a database. The indicator will be extracted automatically from their responses, with a report of the indicator shown to the respondent prior to final submission. This will ensure transparency of the process and will allow for final confirmation of the results.

In the previous edition of this questionnaire, 90 States and the EU responded to a relevant section that will be expanded to cover variable 1 of this indicator. The EU responded on behalf of its member States for this particular section. The sample size will differ from year to year depending on the number of respondents. The next questionnaire will be sent out towards the end of 2017 and remain open for 2-3 month period.

Data Availability

Description:

The data required for this indicator is not currently available. It will become available in early 2018 after the closure of the 2017/18 edition of the Questionnaire for monitoring the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries. Thereafter it will be collected regularly every two years through the Questionnaire for monitoring the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.

Time series:

2017 (When available will become baseline)

Calendar

Data collection:

Current data collection cycle: November 2017 – February 2018

Next data collection cycle: November 2019 – February 2020

Data release:

Current data collection cycle: April-June 2018

Next data collection cycle: April-June 2020

Data providers

Data is typically provided by the National Fishery Ministries/departments.

Data compilers

FAO

References

URL:

SDG 14.6.1: <http://www.fao.org/sustainable-development-goals/indicators/14.6.1/en/>

Related indicators

SDG 1, SDG 2, SDG 5, SDG 12, SDG 13, SDG 14.2/4/5/6/7/c

Appendix 1: Questions and scoring

Section not applicable if:	Question not applicable if:	Questions: (Note: when applicable "1-5" is a range representing extent of implementation starting from "1" being "Not at all" up to "5" being "Fully")	Response Type	Total Possible Indicator Score per Question:	Indicator Score per Response Type:					Variable Weighting Multiplier:			
					Yes	No	1	2	3		4	5	
General Questions to Determine a States Applicability to Instruments to Combat IUU Fishing													
		A.1) Is your country land-locked?	Yes/No	-	-	-	-	-	-	-	-		
		A.2) Does your country flag vessels conducting fishing and fishing related activities to operate in:											
	"Yes" to: A.1	A.2.1) Areas within the national jurisdiction of your country including your Economic Exclusive Zone (e.g. internal waters, territorial sea and archipelagic waters of an archipelagic State)?	Yes/No	-	-	-	-	-	-	-	-		
		A.2.2) The High Seas?	A.2.2) The High Seas?	Yes/No	-	-	-	-	-	-	-		
			A.2.3) Waters under the jurisdiction of other coastal States?	Yes/No	-	-	-	-	-	-	-		
		A.3) Are any of the vessels flying your flag conducting fishing and fishing related activities authorised by other States to operate in:	A.3.1) Waters under the jurisdiction of the concerned State(s)?	Yes/No	-	-	-	-	-	-	-		
			A.3.2) The High Seas?	Yes/No	-	-	-	-	-	-	-		
	"Yes" to: A.1	A.3) Does your country authorise vessels flying the flag of other States and which conduct fishing and fishing related activities, to:											
		A.3.1) Enter and use the designated ports of your country?	Yes/No	-	-	-	-	-	-	-	-		
			A.3.2) Operate within waters under the jurisdiction of your country including your Economic Exclusive Zone (e.g. internal waters, territorial sea and archipelagic waters of an archipelagic State)?	Yes/No	-	-	-	-	-	-	-		
Variable 1. the 1982 United Nations Convention on the Law of the Sea - Weighting 10%													
"Yes" to: A.1 and "No" to: A.2.2, A.2.3, A.3.1 and A.3.2	"Yes" to: 1.1	1.1) Is your country a Party to the United Nations Convention on the Law of the Sea (UNCLOS)?	Yes/No	0.2	0.2	0	-	-	-	-	x10 if Variable Applicable		
		1.2) If no to 1.1, has your country initiated the process to becoming Party to UNCLOS?	Yes/No	0.1	0.1	0	-	-	-	-			
		1.3) To what extent is your country implementing the provisions of the UNCLOS in relation to coastal States and flag State responsibilities for the management of fisheries, with regard to:	1.3.1) Policy	1-5	0.2	-	-	0	0.05	0.1		0.15	0.2
			1.3.2) Legislation	1-5	0.2	-	-	0	0.05	0.1		0.15	0.2
			1.3.3) Institutional framework	1-5	0.2	-	-	0	0.05	0.1		0.15	0.2
			1.3.4) Operations and procedures	1-5	0.2	-	-	0	0.05	0.1		0.15	0.2
Variable 2. the 1995 United Nations Fish Stocks Agreement - Weighting 10%													
"Yes" to: A.1 and "No" to: A.2.2, A.2.3, A.3.1 and "No" to: A.2-A.4	"Yes" to: 2.1	2.1) Is your country a Party to the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement)?	Yes/No	0.2	0.2	0	-	-	-	-	x10 if Variable Applicable		
		2.2) If no to 2.1, has your country initiated the process to becoming Party to the UN Fish Stocks Agreement?	Yes/No	0.1	0.1	0	-	-	-	-			
		2.3) To what extent is your country implementing the provisions of the UN Fish Stocks Agreement in relation to coastal State and flag State responsibilities for the management of fisheries, with regard to:	2.3.1) Policy	1-5	0.1	-	-	0	0.025	0.05		0.075	0.1
			2.3.2) Legislation	1-5	0.1	-	-	0	0.025	0.05		0.075	0.1
			2.3.3) Institutional framework	1-5	0.1	-	-	0	0.025	0.05		0.075	0.1
			2.3.4) Operations and procedures	1-5	0.1	-	-	0	0.025	0.05		0.075	0.1
		2.4) To what extent is your country engaged in sub-regional, regional and international cooperation in enforcement, as required by the UN Fish Stocks Agreement?	1-5	0.4	-	-	0	0.025	0.05	0.075		0.1	
Variable 3. National Plan of Action to Combat IUU Fishing in Line with IPOA-IUU - Weighting 30%													
		3.1) Has your country developed a national plan of action to combat IUU fishing (NPOA-IUU)?	Yes/No	0.2	0.2	0	-	-	-	-			

Section not applicable if:	Question not applicable if:	Questions: (Note: when applicable "1-5" is a range representing extent of implementation starting from "1" being "Not at all" up to "5" being "Fully")	Response Type	Total Possible Indicator Score per Question:	Indicator Score per Response Type:							Variable Weighting Multiplier:	
					Yes	No	1	2	3	4	5		
"Yes" to: A.1 and "No" to: A.2.2, A.2.3, A.3.1 and A.3.2 or "No" to: A.2-A.4	"Yes" to: 3.1	3.2) If no to 3.1, is there an intention to develop a national plan of action?	Yes/No	0.1	0.1	0	-	-	-	-	-	x30 if Variable Applicable	
	"No" to: 3.1	3.3) If yes to 3.1, to what extent has your country implemented its NPOA-IUU, with regard to:											
		3.3.1) Policy	1-5	0.2	-	-	0	0.05	0.1	0.15	0.2		
		3.3.2) Legislation	1-5	0.2	-	-	0	0.05	0.1	0.15	0.2		
		3.3.3) Institutional framework	1-5	0.2	-	-	0	0.05	0.1	0.15	0.2		
	3.3.4) Operations and procedures	1-5	0.2	-	-	0	0.05	0.1	0.15	0.2			
Variable 4. the 2009 FAO Agreement on Port State Measures - Weighting 30%													
"Yes" to: A.1 and "No" to: A.2.2, A.2.3, A.3.1 and A.3.2 or "No" to: A.2-A.4		4.1) Is your country Party to The FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA)?	Yes/No	0.2	0.2	0	-	-	-	-		x30 if Variable Applicable	
	"Yes" to: 4.1	4.2) If no to 4.1, has your country initiated the process to become a Party to the PSMA?	Yes/No	0.1	0.1	0	-	-	-	-			
		4.3) To what extent has your country implemented the provisions of the PSMA, with regard to: (even through relevant regional mechanisms)											
		4.3.1) Policy	1-5	0.15	-	-	0	0.0375	0.075	0.1125	0.15		
		4.3.2) Legislation	1-5	0.15	-	-	0	0.0375	0.075	0.1125	0.15		
		4.3.3) Institutional framework	1-5	0.15	-	-	0	0.0375	0.075	0.1125	0.15		
		4.3.4) Operations and procedures	1-5	0.15	-	-	0	0.0375	0.075	0.1125	0.15		
	4.4) Has your country designated ports to receive vessels flying the flag of other States that are conducting fishing and fishing related activities, as required under the PSMA?	Yes/No	0.1	0.1	-	-	-	-	-				
	4.5) Has your country designated an authority that shall act as a contact point for the exchange of information, as required by the PSMA?	Yes/No	0.1	0.1	-	-	-	-	-				
Variable 5. Flag State Responsibilities - Weighting 20%													
"No" to: A.3 and A.4		5.1) Has your country become a Party to The FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (the Compliance Agreement)?	Yes/No	0.15	0.15	0	-	-	-	-		x20 if Variable Applicable	
	"Yes" to: 5.1	5.2) If no to 5.1, has your country initiated the process to become a Party to the Compliance Agreement?	Yes/No	0.05	0.05	0	-	-	-	-			
		5.3) To what extent has the Compliance Agreement and/or other flag state responsibilities been implemented with regard to:											
		5.3.1) Policy	1-5	0.1	-	-	0	0.025	0.05	0.075	0.1		
		5.3.2) Legislation	1-5	0.1	-	-	0	0.025	0.05	0.075	0.1		
		5.3.3) Institutional framework	1-5	0.1	-	-	0	0.025	0.05	0.075	0.1		
		5.3.4) Operations and procedures	1-5	0.1	-	-	0	0.025	0.05	0.075	0.1		
		5.4) Does your country maintain a record of vessels authorized by your country to operate on the high seas conducting fishing and fishing related activities and supply the record to the FAO or interested States at their request?	Yes/No	0.075	0.08	0	-	-	-	-			
		5.5) Does your country ensure that vessels flying your flag, that are conducting fishing and fishing related activities, have not engaged in previous activities that has undermined the effectiveness of international conservation and management measures, unless it has satisfied certain requirements in line with the provisions of the FAO Compliance Agreement or the UN Fish Stocks Agreement?	Yes/No	0.075	0.08	0	-	-	-	-			
	5.6) Does your country ensure that vessels flying your flag, that are conducting fishing and fishing related activities, provide your country with information on its operations as may be necessary to enable your country to fulfil its obligations as a flag State?	Yes/No	0.075	0.08	0	-	-	-	-				
	5.7) Does your country ensure vessels flying your flag do not conduct unauthorised fishing or fishing related activities within areas under jurisdiction of other States?	Yes/No	0.075	0.08	0	-	-	-	-				

Section not applicable if:	Question not applicable if:	Questions: (Note: when applicable "1-5" is a range representing extent of implementation starting from "1" being "Not at all" up to "5" being "Fully")	Response Type	Total Possible Indicator Score per Question:	Indicator Score per Response Type:						Variable Weighting Multiplier:	
					Yes	No	1	2	3	4		5
		5.8) Has your country undertaken an assessment of your country's performance as a flag State in accordance with The FAO Voluntary Guidelines for Flag State Performance?	Yes/No	0.15	0.15	0	-	-	-	-	-	
	"Yes" to: 5.8	5.9) If no to 5.8, does your country intend to do so in the future?	Yes/No	0.05	0.05	0	-	-	-	-	-	
				Final Indicator Score = Total of Variables / Total Multiplier of Applicable Variables								

Appendix 2: Example indicator scoring

The general question ascertain the applicability of the instruments to a State.

- Country A is a coastal State, port State and flag State with high levels of implementation of instruments to combat IUU fishing.

- Country B is a coastal State, port State and flag State with very low levels of implementation of instruments to combat IUU fishing, however it still scores some points for initiating the processes of becoming a party to certain agreements and base implementation of UNCLOS.

- Country C is a coastal State and port State but does not flag any vessels conducting fishing or fishing related activities. It is not a party to any of the agreements but has a high level of implementation of instruments to combat IUU fishing to which it is applicable.

The table on the next page shows hypothetical responses for this three countries, the scores that they achieve with these responses and finally the bands that these scores translate into.

Questions:	Country A		Country B		Country C	
	Responses	Variable Score	Responses	Variable Score	Responses	Variable Score
General Questions						
A.1	No	-	No	-	No	-
A.2.1	Yes		Yes		No	
A.2.2	Yes		Yes		No	
A.2.3	Yes		Yes		No	
A.3.1	Yes		Yes		No	
A.3.2	Yes		Yes		No	
A.4.1	Yes		Yes		Yes	
A.4.2	Yes		Yes		Yes	
Variable 1. UNCLOS – 10%						
1.1	Yes	0.9	Yes	0.5	No	0.7
1.2	n/a		n/a		No	
1.3.1	4		3		5	
1.3.2	5		3		5	
1.3.3	5		2		4	
1.3.4	4		2		4	
Variable 2. Fish Stocks Agreement – 10%						
2.1	Yes	0.85	No	0.1	No	0.75
2.2	n/a		Yes		No	
2.3.1	4		1		4	
2.3.2	5		1		5	
2.3.3	5		1		5	
2.3.4	4		1		4	
2.4	4		1		5	
Variable 3. IPOA-IUU – 30%						
3.1	Yes	0.9	No	0.1	Yes	0.95
3.2	n/a		Yes		n/a	
3.3.1	4		n/a		5	
3.3.2	5		n/a		5	
3.3.3	5		n/a		4	
3.3.4	4		n/a		5	
Variable 4. PSMA – 30%						
4.1	Yes	0.725	No	0	No	0.725
4.2	n/a		No		No	
4.3.1	5		1		5	
4.3.2	5		1		5	
4.3.3	5		1		4	
4.3.4	3		1		4	
4.4	No		No		No	

4.5	No		No		No	
Variable 5. Flag State Responsibilities – 20%						
5.1	Yes	0.975	No	0.175	n/a	n/a*
5.2	n/a		Yes		n/a	
5.3.1	5		1		n/a	
5.3.2	5		1		n/a	
5.3.3	5		1		n/a	
5.3.4	4		1		n/a	
5.4	Yes		Yes		n/a	
5.5	Yes		No		n/a	
5.6	Yes		No		n/a	
5.7	Yes		No		n/a	
5.8	Yes	No	n/a			
5.9	n/a	Yes	n/a			
Indicator Score: (Weighted average)		0.86		0.13		0.73
Band		5		1		4